

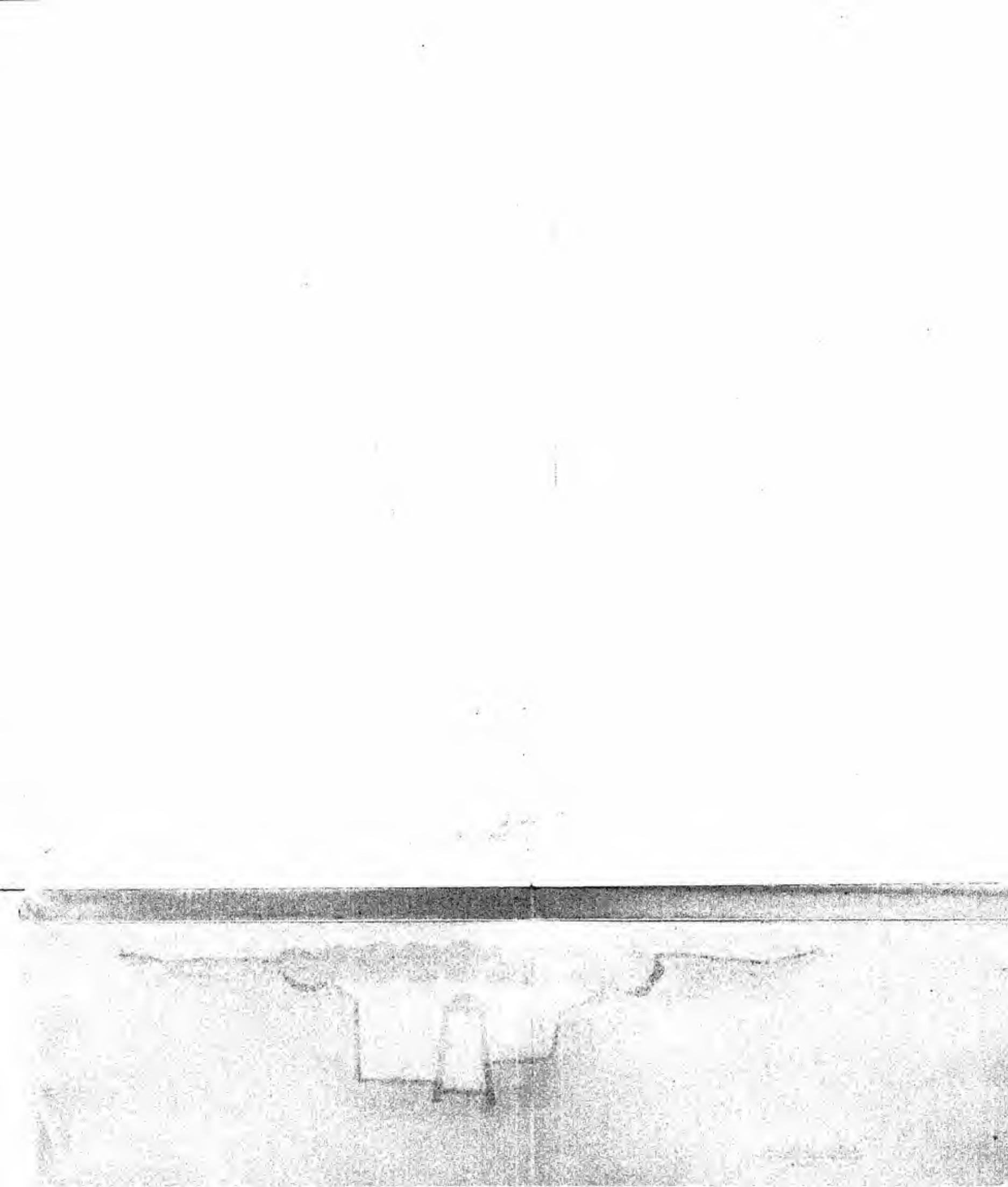
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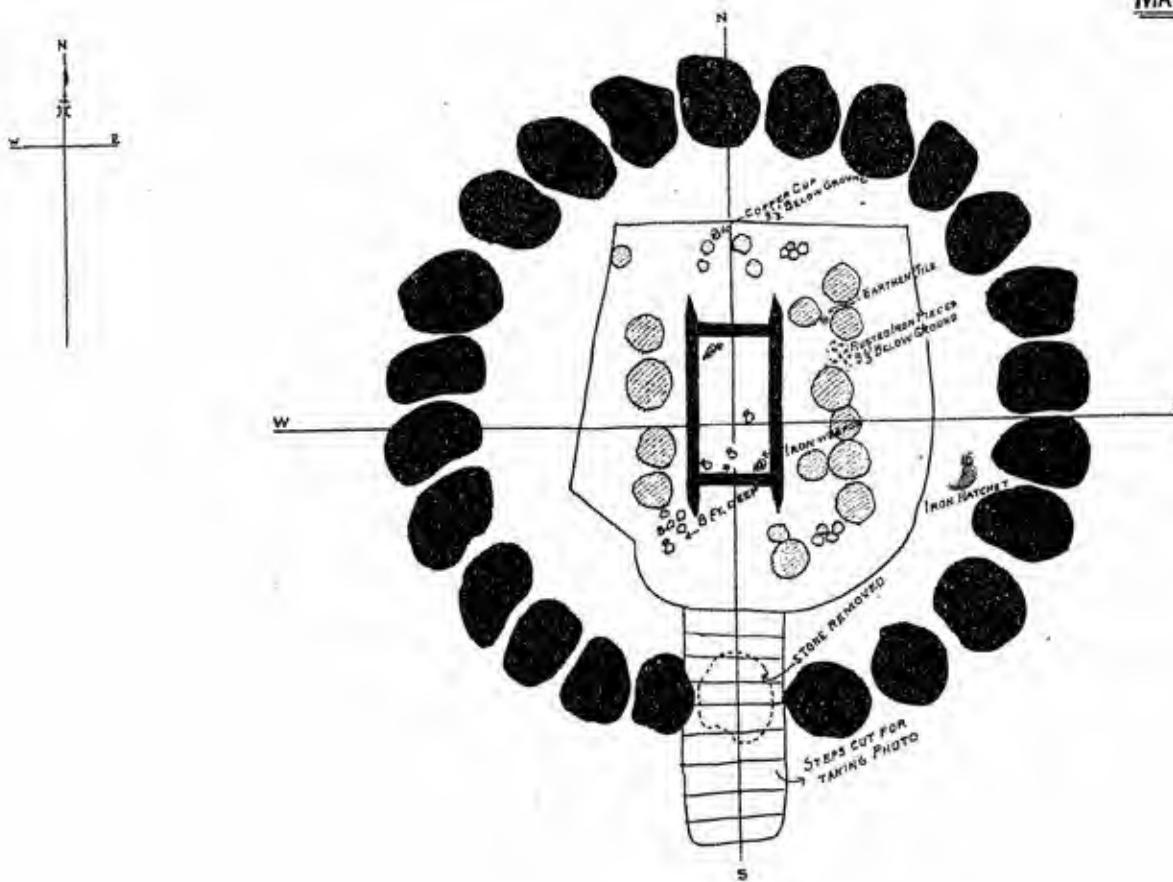
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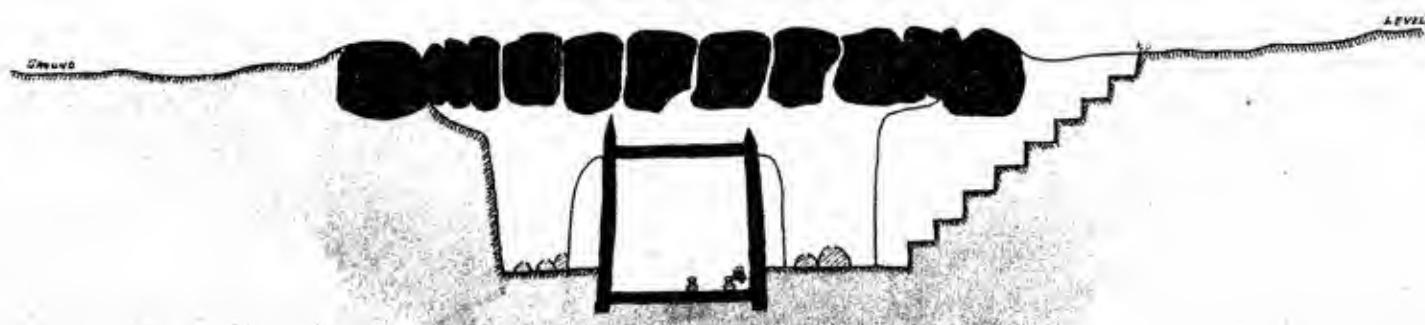


MAULA-ALI (N) CAIRN- N° I

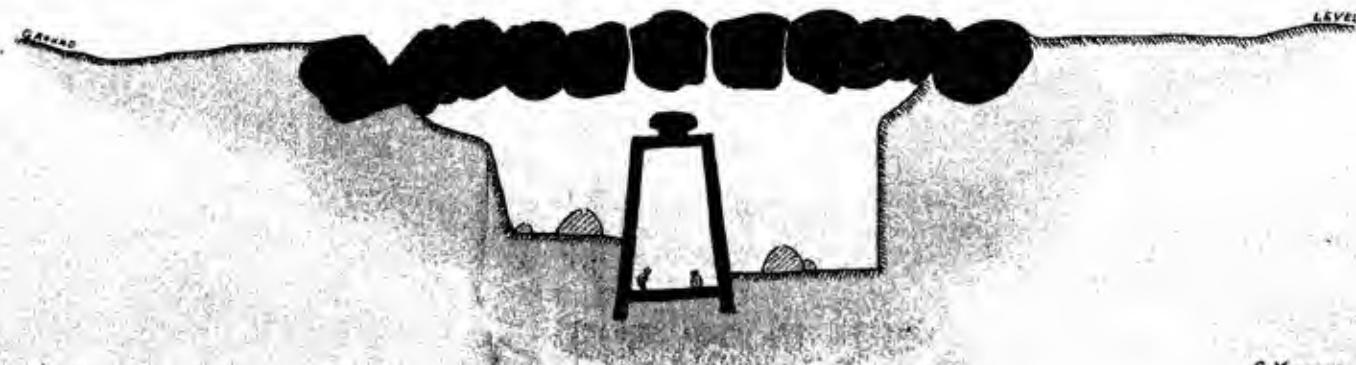
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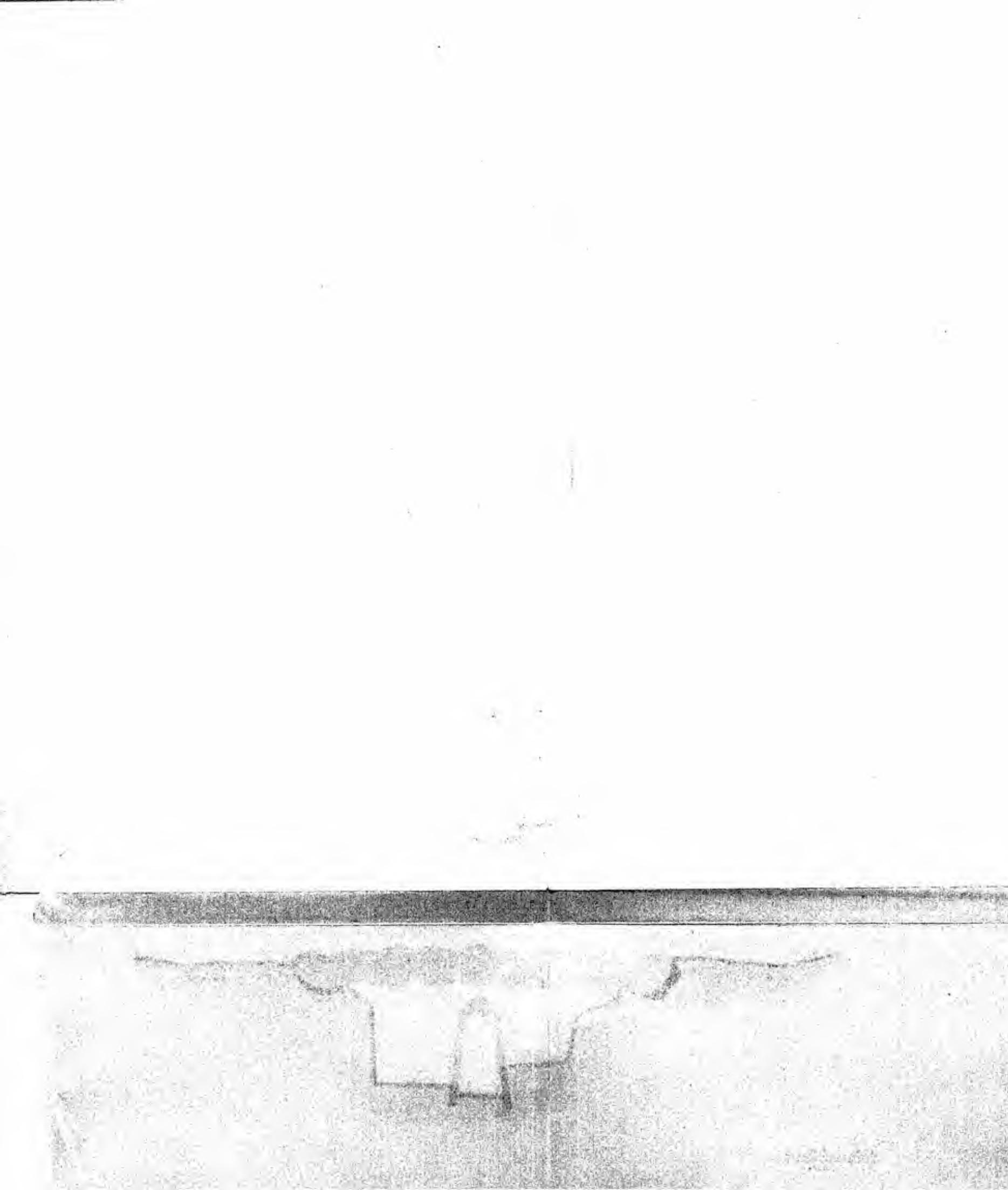


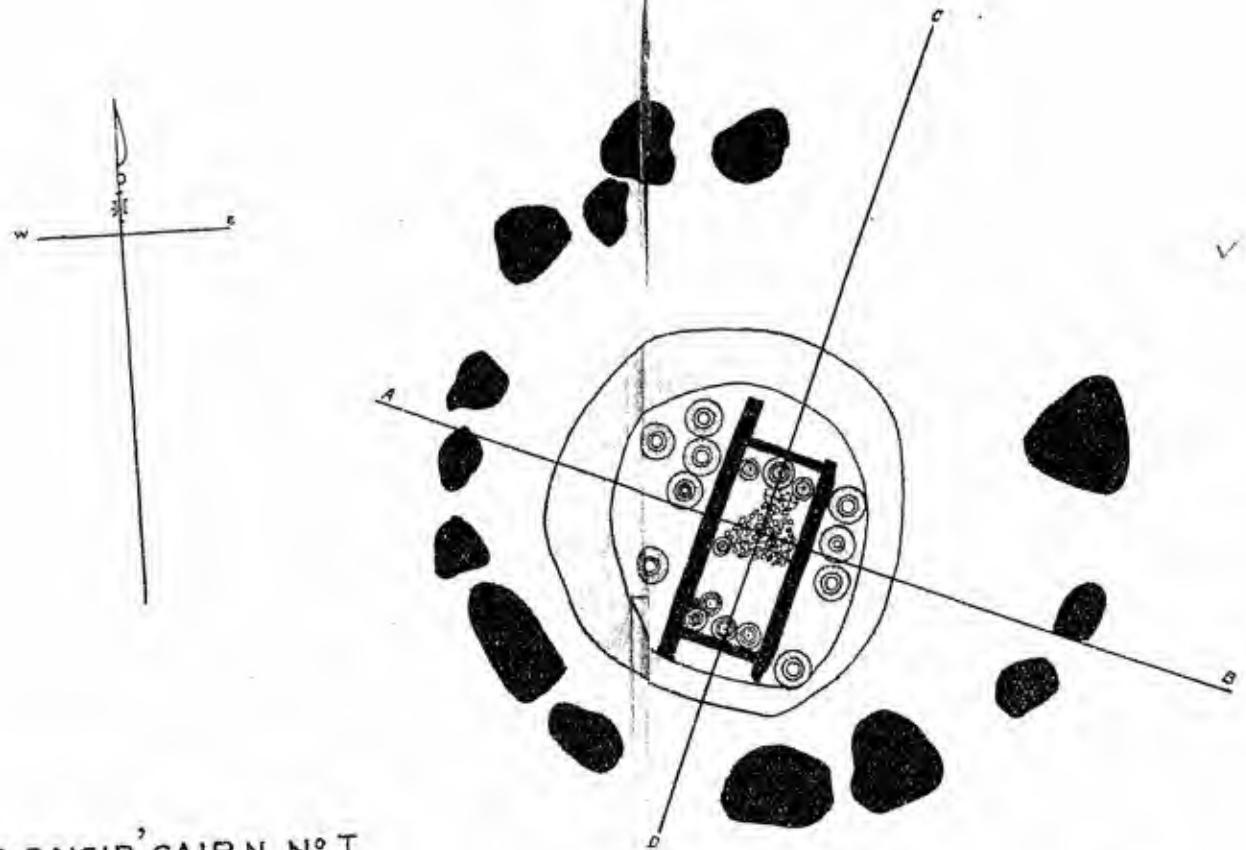
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G.YAZDANI

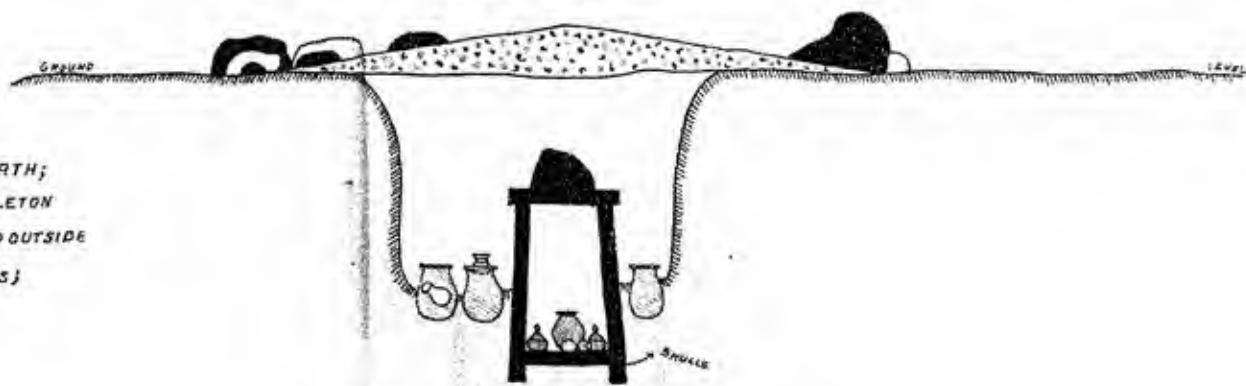
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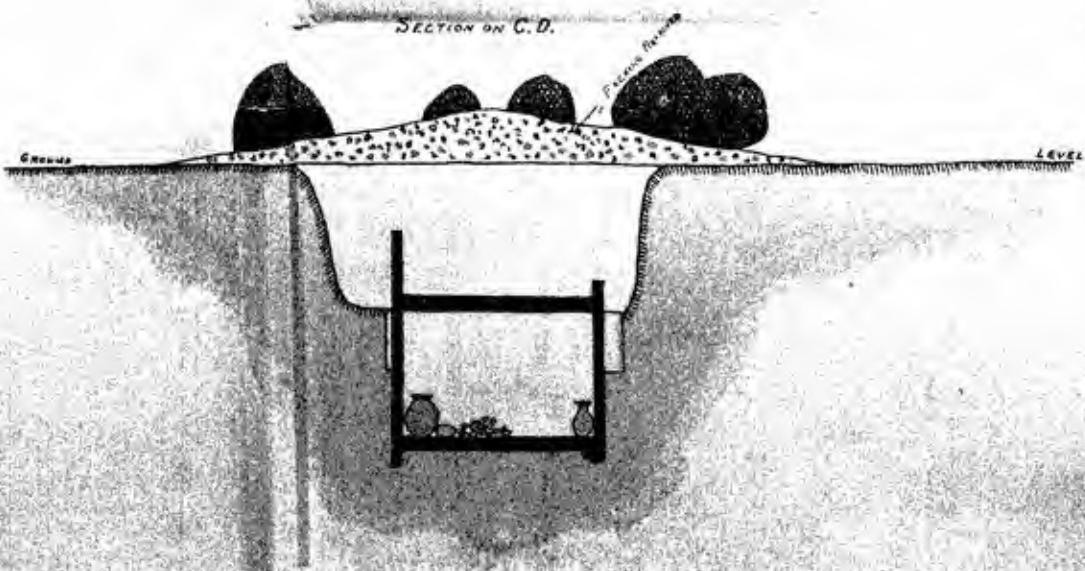
GROUP RAIGIR CAIRN NO. I

SECTION ON A.B.



NOTE:- CIST ORIENTATED EAST OF NORTH;
BONE FRAGMENTS FROM SKELETON
FOUND; POTS BOTH INSIDE AND OUTSIDE
CIST SHOW INSCRIBED MARKS;
STONE CIRCLE INCOMPLETE.

SECTION ON C.D.



Notes:-
Black Pottery
Red Pottery
Bone
Stone

Hyderabad Cairns

(Their Problems.)

by

E. H. Hunt, M.A. (Oxon.), F.R.C.S., etc.

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The Times Press,
1916

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LIST OF PLATES.

XLI. STONE CIRCLE, MAULA ALI.

XLII. CIST, MAULA ALI.

XLIII—XLVI. POTTERY OF VARIOUS SIZES AND PATTERNS FROM MAULA ALI, RAIGIR AND DORNAKAL.

XLVII. IRON IMPLEMENTS FROM MAULA ALI AND DORNAKAL.

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X.

HYDERABAD CAIRNS.

(THEIR PROBLEMS.)

BY E. H. HUNT, M.A. (OXON.), F.R.C.S., etc.

At the meeting of the Society held on the 23rd February, 1916, Mr. Yazdani showed a number of pots and implements which he had found while exploring four cairns at Maula Ali. Several cairns have been opened since then, and the articles found are shown this afternoon. A commencement has been made towards the collection of the literature of the subject, and much information has been obtained. We are still however waiting for numerous books and original papers, and have as yet merely touched the fringe of the subject. It seems however worth while to record our findings so far, and to enumerate the problems which are facing us, indicating at the same time the lines on which investigation is being carried out. An increasing number of members are becoming interested in the subject, and several have undertaken special sections of the work. Plans and photographs are being prepared, and it is hoped that the Society may be able to publish a second paper soon, more fully illustrated, to which it is hoped that many members will contribute. The present communication is in the nature of a preliminary note.

In the account which follows no attempt will be made to draw any final conclusions, but the cairns

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will be described in sufficient detail to show what problems await solution and their importance. Each feature will be treated separately in the order met with in opening the cairn.

HEADINGS.

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- (2) SURFACE FEATURES.
 - (a) Stone circle.
 - (b) Rubble packing.
 - (c) Large Central Stones.
 - (d) Erosion.
- (3) THE SURROUNDINGS OF THE CIST.
 - (a) Muram.
 - (b) Pots, etc. Iron, Copper.
- (4) THE CIST.
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- (5) THE CONTENTS OF THE CIST.
 - (a) Earth and Stones.
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- (6) CHANGES WHICH OCCURS IN BONE AND IRON WHEN BURIED.
- (7) IRON AND COPPER.
- (8) GRANITE. (Method of manufacture).
- (9) ORIENTATION.
- (10) LEGEND, FOLKLORE, AND PRESENT DAY CUSTOM.
- (11) OUR PROBLEMS.
- (12) THE CAIRN BUILDER.

(1) Situation and Distribution.

The cairns are scattered over large areas of the State, but seem never to be found except in "*muram*" soil, *muram* being the main disintegration product of granite.

They are collected in groups, varying in number from a few to many hundreds. It is of first importance that their distribution should be known,

and it is hoped that the District Officials of the State may be able to send in reports, showing the exact situation of the groups, so that an accurate map may be prepared. This brings us at once to the main point, for cairns are not peculiar to this State, and our map, though it may show a thousand groups and 100,000 cairns, will only be one small patch connected through other parts of India, to a line of cairns varying in type and running through Makran, Baluchistan, Mesopotamia, Syria, Egypt, North Africa, Spain and Brittany, to Cornwall, Wales, Northumberland, Scotland and Ireland.

Our investigation at once ceases to remain of merely local interest but is part of a very wide spread work. One of the main reasons why this note is being published now, is that it may be of assistance in stirring up interest among the District Officers, and thus help on the work of collecting data.

As in other parts of the world, cairns are found on fairly high ground, usually near granite outcrops, and where the soil is not fit for cultivation. It is true that castor seed is nowadays grown round cairns and over their remnants (*e.g.*, at Raigir and Dornakal), but this plant grows well on a poor soil which is unsuitable for other crops.

No special arrangement is found in the groups, though some of the cairns at Dornakal seem to lie on a line roughly east and west. The distribution of the groups which are so far known strongly suggests that the country was fairly thickly populated.

I am glad to say that Mr. Wakefield has already taken in hand the arduous task of collecting data as to

detailed distribution. We can never hope to locate all, for their site is away from cultivation and often covered with scrub jungle, or forest. Under such circumstances they are not easily recognised, and Mrs. Gough is to be congratulated in having recently located a group which might well have passed without notice, near Begampet. The circles are so destroyed, and the jungle so prominent that a casual observer could ride through them often and note nothing. Yet there are hundreds in the group.

Nobody need take as a serious estimate the hypothetical figure just mentioned, "A thousand groups and 100,000 cairns." Yet for all we know this may even be under the mark.

Each group indicates prolonged use, for it cannot be supposed that any but important local chiefs or religious leaders could have received such elaborate and expensive interment.

A few words of warning may not be out of place. Let an observer travel from Hyderabad, through Nizamabad, and across the Godavari river. Until he reaches the river he will find himself in a land of granite and *muram*. Tanks abound, and the Telugu-speaking population occupy themselves in the main with irrigation. He crosses the river at Basar and at once enters the "Trap" country, with its black cotton soil, dry cultivation, and Mahratta-speaking people. The river, which here follows the edge of the trap, forms a dividing line and the contrasts are so great that one might travel 1,000 miles and be less surprised. Now, the *granite-muram* area is the area of the cairn, and as far as we know, none

are found in the trap-black cotton soil districts. Let us not however infer that the populations were always different, for it may well be that the absence of the cairn on the far side of the river is simply due to the fact that material for making cairns is not at hand. Slabs would be difficult or impossible to obtain, and the soil, etc., would bring in other difficulties.

Then again, the groups which are known now are all within a short distance of the railway. Three station yards enclose cairns in their limits, Dornakal, Raigir and Balanagar. Between Khammamet and Chintakani the line cuts through a group, and Mrs. Gough's group lies only a few feet off the line. The Maula Ali groups lie one and about $2\frac{1}{2}$ miles from the metre-gauge line. At Madira and Manukota I hear of big groups a few miles from the railway. It is of course obvious that this distribution is merely coincident with that strip of country which is best known, and it may be that they lie as thick on any other line which may be drawn across the State. As yet we do not know. If they do, then their number is legion. We must however remember two factors. Firstly, the railway survey chooses a track which follows high ground, the watershed, and as far as possible picks out exactly the same type of land surface as was selected for the cairns. Secondly, the railway follows the natural road routes of the country, which may have been in use for countless centuries, and along which the old settlements may have crowded. In any case our map will always show the cairns to be distributed along well-known routes rather than in out-of-the-way places owing to the difficulty in locating them; and allowances will have to be made accordingly.

(2) Surface Features.

(a) *The Stone Circle.*—The most striking surface feature is the stone circle. The largest as yet found is 42 feet in diameter, in the group to be referred to as Maula Ali (West). The average is about 18 feet to 20 feet, with smaller circles, down to about 11 feet. The number of stones varies greatly and also their size. In some the stones are small, while in others none would weigh less than a ton. A small circle would have about thirteen stones, and a large one forty. One at Maula Ali (West) has a double circle. It may be that the number of stones has no further significance than that corresponding to the number of guns in a salute. One may quote from Lord Avebury on this point.*

"The size of the tumulus may be taken as a rough indication of the estimation in which the deceased was held, as James also tells us was the case among the North American Indians. The Scotch Highlanders have a complimentary proverb 'Curri mi clach er du cuirn' (I will add another stone to your cairn)."

On the other hand, size and number may be of great importance, and demand careful investigation. To quote again from Lord Avebury—

"The stones are placed at equal distances, and the number of them probably had some significance. The two inner circles at Abury, the lesser circles at Stennis, and one at Stanton Drew each consisted of twelve. The outer circles of uprights and transoms at Stonehenge,

* *Prehistoric Times*, p. 123.

the large circle at Stanton Drew and the circle at Abor Low, each of thirty. Those at Rollrich and Stennis, of sixty and the large enclosing circle at Abury of one hundred stones. Four circles at Boscowen, and adjacent places in Cornwall have each been formed of nineteen stones."

The Rev. J. Griffiths, who has done much important work in conjunction with Sir Norman Lockyer, has written a long and most interesting letter to me, advising a most accurate measurement of circles and cists, and adds "once such measures are tabulated they will tell a remarkable tale." I had sent a rough plan of a cairn at Maula Ali (North), giving measurements and the number of the stones. It chanced to be 24, a common number. He says: "The fact that the surrounding stones are 24 is remarkable, for the first thing I looked for in your plan was that 24." One of the cairns opened at Maula Ali by Mr. Yazdani had 22 stones in the circle itself, and two more inside, to the East, making up 24. Between these two extra stones was a fine iron axe. Mr. Griffiths lays stress on accurate records being kept of the diameter of the circles, to determine whether they are true circles or ovals, with the long axis in one special direction.

It is clear then that the stone circle as such demands a full enquiry and many can help in this work.

As a general rule, the stones which form the circle are granite. Some however are of trap, and in many instances these latter have been used for neighbouring buildings. This particularly applies

to the groups at Maula Ali, and when Sir J. Marshall visited the spot in January Waddars were at work, breaking up almost the last remaining trap circle. This fully accounts for the large number of cairns which have no circle.

(b) *Rubble packing*.—The next surface feature to be referred to is the rubble packing, which fills the space inside the circle to a depth of roughly one to four feet. It is composed of granite or trap, whichever is most easily procured locally. The axe mentioned above was found in this rubble, and careful removal is clearly called for. Mr. Puzey is of opinion that this rubble packing may once have been much higher than is now found, the soil between the stones having been washed away. As it is, the rubble does not now project much above the level of the stone circle.

(c) *Large Central Stones*.—Only one group as yet has been found showing these, to the west of the Mauli Ali hills, in the gap between them. This group has not yet been touched, but Mr. Yazdani hopes to make a start soon. It contains about 200 cairns, as against 390 for the "North" group. Many have large central stones, the largest of which cannot weigh much less than 25 tons. These are placed in the centre of the circle. What lies under them is unknown, and awaits investigation. The *waddar* is busy and has already entirely demolished several. In all cases these large stones are near a convenient granite outcrop. There is no such outcrop near the north group, and this may account for their absence there. The site available for cairns at this west group is entirely occupied, and it may be that the north group was the later.

(d) *Erosion.*—Lastly, surface conditions are of interest, in that they afford intrinsic evidence of age. When first discovered the Dornakal group were covered with dense jungle, but the evidence to be derived from this is not important, though in North America it is thought that far more than 500 years are required for typical forest to cover an area which has been cleared. Perhaps Mr. Lodge can help us here.

Erosion affords more information, and four groups have been studied fairly carefully. In these hardly any erosion has taken place where cairns are situated on the tops of local elevations, but much is seen where there is a dip in the ground and consequently a greater flow of water. The wearing away of the ground surface seems to vary directly with the amount of water which would flow over it, though another factor comes in, namely, the relative ages of the cairns. A long period of time must have passed between the construction of the earliest and the latest cairn in any one group, and more so with cairns of different groups. The interval between the first and the last cairn here may be greater than the time which has passed since the last was made, and erosion may give much evidence, both as to absolute and to relative age.

In one extreme case at Maula Ali (North) a shallow *nullah* has formed in the midst of the cairns, and the ground has suffered so much erosion that the side stones of a cist are seen projecting from the surface. The site is indicated on the large Maula Ali plan, and is well worth a visit.

This remnant of a cairn is very significant. When it was made, the ground must have been level

or nearly so. Since then the rain falling on an acre or two of flat ground has washed away at least seven feet of hard, almost rock-like *muram*, and all traces of the stone circle and rubble packing have disappeared. Not only has the bulk of water been almost insignificant from year to year, but its rate of flow was low, a factor of even greater importance. A long period of time must therefore be allowed. On the other hand this same cairn remnant serves well to correct our perspective of time, for we must think of time, not only in its relation to historic events, but also to geological changes. We must compare the time which has passed since this cairn was made with that which has passed since men such as the "Piltdown" and "Galley Hill" men lived, periods to be reckoned in hundreds of thousands of years. We must remember also that the Piltdown man had a brain which according to Keith was equal in size to ours and that the Galley Hill man could presumably pass to-day without attracting any special attention through the streets of London or Hyderabad. Yet again, in our consideration of time, we must not forget that since the * Piltdown man made his Eoliths the ages which have passed are but as one day in centuries of astronomical time during which the sun and this earth of ours have evolved.

(3) The Surroundings of the Cist.

(a) *Muram*.—On removing the rubble, hard *muram* is exposed. This differs in no way from the natural *muram*, and it is quite impossible to make out any dividing line showing the original extent of the excavation. As a result, many important

* Keith.

finds are missed, and it was quite by accident that a fine dagger was found at Cairn No. 2 in the Maula Ali (North) group, outside the ordinary limits of exploration.

(b) *Pots, etc., Iron, Copper.*--At a varying depth, the top of the cist is found, and in one instance broken pots were discovered on the top, this being an unusual feature. The cist is then gradually exposed, and its limits made out. As digging progresses, pots are found, nearly always about half way down. This seems a favourite situation. There may be a second row underneath the top row. The number varies greatly, from five to thirty or more. Almost without exception all these outside pots are broken in the Maula Ali (North) group, having been crushed in by the weight of the soil, which has borne directly on them. It seems hopeless to even attempt to save such pots. A peculiar feature at Dornakal is that at the corners of the cists large pots are found, with small pots inside, usually four. These smaller pots are often more or less intact, and if the base of another pot has acted as a tight lid, they are empty. Otherwise all the outside pots are filled with *muram* to such an extent as to lead some to think that they must have been so filled when the cairn was made. This point will be referred to later. Last December a cairn was opened at Dornakal, and in one of these outside pots a piece of iron was found, shaped like a broken point of a sickle. This was interesting, as indicating agricultural pursuits. My assistant, Mr. Venkatapayya, has recently opened another cairn close by, and sends me a complete sickle, found in a similar pot, at the north-west corner, the first

having been found at the north-east. At Maula Ali Mr. Yazdani found a peculiar set of iron pieces between some pots on the west side of the cist, and these seem to be the three supporting legs of a cooking pot, the body of the pot being represented merely by a stain in the *muram*. He found also a broken bowl, which appears to be made of copper. This was to the north of the cist, and awaits analysis, so that nothing more can be said about it at present. Our Honorary Member, Mr. Bishop, saw it, and being a mining expert at once remarked, "This has changed back into its ore again." One would imagine that such a change requires a long period of time. A second "copper" article was found at Maula Ali, but as yet none elsewhere.

I have mentioned that it is difficult to conserve the outside pots where they are found in fragments. At Raigir, however, the soil is light and porous, so that the outside pots are in a remarkably fine state of preservation. Several are shown to-day, and one large one is intact, with its lid. The outside pot can be studied here to perfection.

Even without the evidence afforded by the sickles, it was probable that the large outside pots contained grain. No trace of any organic matter can be found now, though Mr. Longhurst has found traces of grain in cairns of a different type at Kurnool.*

(4) The Cist.

We now come to the cist itself. The constancy of its characteristics is one of the most striking features of these cairns.

* Longhurst, p. 40.

(a) *The Granite Slabs.*—It is invariably composed of granite slabs. The size varies within narrow limits, the side stones being from about six to ten feet long, and from five to over six feet high. Accurate measurements are being taken, but at the moment do not concern us. The head stones fit in between the side stones, and that to the north is the tallest, projecting well above the side stones. It is sometimes shaped in a peculiar manner, having rounded lateral projections, and a rounded head, so as to be almost cruciform. The top is covered with slabs to form the roof, and under all is the floor stone. As a rule the various slabs fit each other well, and the cracks between them are small. We shall see later that this has a most important bearing on the state of things inside.

(b) *Disintegration.*—The condition of the granite varies. At Raigir, in the cairn opened on June 11, the slabs were almost as if they had been made yesterday. These Raigir slabs may clear up the question as to the method of manufacture, which is discussed later. At Maula Ali, soil conditions are different, and marked disintegration has set in. Some slabs are so soft that they can be crumbled away with the finger. This particularly applies to the outer surface, which after some months of exposure to air and rain is falling off in flakes, and the granite is turning into *muram* under one's eyes. Mr. Puzey who has had much experience with *muram* tells me that in sinking wells it is found to a depth of over sixty feet; and the fact that it has formed *in situ* is shown by the veins of quartz which are found running through it. This change of form is an intensely slow process, and the great depth to

which *muram* is now found is accounted for by the granite of these parts having formed a surface rock almost ever since the crust of the earth became first consolidated. A long period would be required for the change which is seen in these Maula Ali slabs. As a contrast, to the west of the Maula Ali (North) group there lies an old boundary stone, its inscription as yet unread, but dating probably to about the 12th century. This stone has a surface which is almost unaltered though it has been exposed to conditions which are more severe than those surrounding the buried slabs. Mr. Mackenzie has suggested to me that such boundary stones would be made from blocks which were especially hard, and that this may account for its excellent condition. The slabs would naturally be made from rock which could be readily split.

It is to be regretted that many cairns are found which have been opened in the past without any structure being looked at beyond the interior of the cist. There is merely a small crater-like depression in the centre of the stone circle to indicate that some inquisitive person has looked inside. It is to be hoped that in future anyone who opens a cairn will do so thoroughly with a full record of everything found and all measurements.

(c) *Orientation*.—Finally, before the cist is opened, its orientation must be carefully observed. We shall see later the bearing of this important point, where it is discussed in a special section.

(d) *The Shape of the Cist*.—The very peculiar shape of the cist may mean that it has some symbolical intent. Sir John Marshall discussed the point last

January, and suggested that it might be a "house." All over the world many tribes to this day bury in an actual house. He further remarked that the unburied house, the Dolmen, may have preceded the buried house, the cist. We must study our Dolmens.

In this connection, the very full provision of pots and utensils has a clear significance.

The idea of a "house" occurred to a humble observer at Raigiz. The roof stones had been partially removed from the cist, and its form could be well seen. An old woman chanced to come by, and showed her astonishment by emitting a continuous stream of comment. Her attentions were equally divided between our heap of "finds" and the cairn itself. She hurried backwards and forwards between them, and each time she looked into the excavation, she exclaimed "Oh there is a regular little house."

The "House of cards" of our childhood is built on the same lines, but the cist is an improvement mechanically. The side stones are not vertical, but incline towards each other, leaning against the wedge-shaped head and foot stones. Similarly, the head and foot stones incline slightly towards each other, being kept apart by the roof stones. We have a double arch, one longitudinal, the other transverse. The greater the outside pressure the greater the stability, and the design admits of no improvement, though in practice a weak point was the roof, for this was sometimes put on carelessly, so that the stones fell in. This mechanical perfection may perhaps have determined the shape.

(5) The Contents of the Cist.

We now come to the most interesting part of our excavation, but great disappointment awaits anyone who expects that his labours will be rewarded without hard work.

(a) *Earth and Stones.*—In most cases when the roof stones are lifted off, a large chasm is seen, and the whole of the bottom of the cavity is filled with hard soil. In some there is little or no cavity, but earth and stones fill the cist. At first sight the appearance of this earth strongly suggests that it was put there deliberately by the people who made the cairn. Much discussion has taken place, but I think I am right in saying that all who have taken part lately are now agreed that the cist was, to commence with, devoid of earth, its entry having taken place during the centuries which have passed since.

It was noted last year at Dornakal that the character of the soil inside the cist varied greatly. In some it was fine, and when mixed with water became a thin mud. In others it was coarse, and of the same nature as the surrounding *muram*. Further that the fine silt was found where the stone slabs fitted well, and the coarse grit where the fit was bad. In an extreme case, a roof stone had fallen bodily in, and other large stones and rubble had followed. The pots are all filled with soil, except where the lid fits well, or where the mouth is tightly closed by the base of another pot. Disintegrated bone is found lying actually in contact with the floor stone, and the soil which lies over these fragments must have come in after separation of

bones had taken place. A good example was found at Raigir in the cairn opened on June 11 and fortunately many were present.

On removing the roof stones an unexpected and beautiful sight was seen. The cist was filled to the very top with soil, worked up by white ants into a perfect spongy frame work. The depth of this sponge was about a foot, below which the soil became compact, but traces of cavities were found in the compact mass, becoming less frequent as the depth increased. The inner surface of the side stones however showed the work marks of the ants down to the very bottom of the cist, six feet deep. Pots without lids were as usual filled with earth, but were empty where the lid was a good fit. The most conclusive evidence was derived from a pot on the floor in the south-west corner, for the lid though a fair fit had not prevented the entry of white ants, and the mouth was partially filled with their spongy nest-work. Roots of trees were found in various stages of decay, running through the soil, and to commence with it may have been such roots which had guided the ants, into what had proved an ideal home, safe from snakes and such like.

At Dornakal and elsewhere there is clear evidence that water has freely entered the cists, and must have carried with it the silt. Each monsoon would lead to an increase. The pots embedded in the silt lie in all attitudes, and strongly suggested that at one time they had been floating about. This must have been in early days.

It will be readily understood that the location and removal of pots, etc., is not easy. They are

embedded in soil which is as hard as our excellent local roads, for it is made of the same material. To commence with one or two intact pots per cairn was a fair average, and the fragments were beyond reconstruction. A method has been recently tried which promises well. It is not essential in such a dry, sandy material as is met with at Raigir, but is invaluable at Dornakal. The top soil is boldly removed until the floor stone is within a foot, and after this nothing is touched save by water. This acts like magic, and affords a further confirmation that the soil inside the cist has entered during the monsoon. We can now depend on securing not single pots but complete sets, intact. A second improvement in our methods should result in even more definite results. A full sized plan is prepared marked in squares, and on this each item found in the cist is noted, in actual size. A label is put on it, and it is an easy matter to reconstruct the position of the contents at any future time. A tape-measure is of course the only essential. A start has been made with these improved methods and great things can be confidently expected. A third improvement is the removal of a side-slab before the cist contents are touched. This has been very helpful in two cairns recently opened at Dornakal.

(b) *Pots.*—The pots vary greatly in shape, and are of two main types, well illustrated at this meeting: (i) rounded red pots with lids, (ii) black dishes without lids. The glaze is very fine in some of these latter. Other shapes are met with, but the two types mentioned are always found. A complete classification will be made for the second paper.

The first cairn opened with water yielded six red pots with lids and six black dishes. These numbers are however probably of no significance, for two other cairns have contained 9 and 25.

(c) *Marks on Pottery*.—On June 27th Mr. Yazdani was cleaning some pottery from Raigir, and noticed peculiar marks on several specimens. These marks may be of great importance, and a full account of the cairn is called for. The Raigir group were known to be important. The soil is dry, and the cairns are many. Local legend is very strong. Some four years back Mr. Munn had opened one with Mr. Chapman, finding beads and bones in an unusually good state of preservation. Mr. Munn is not with us now unfortunately, his many-sided activity being exercised in other spheres : but Mr. Chapman tells me that the cairn they opened was full to the top with earth and stones, packed in layers, and that they concluded this was put in by the builders.* The finding of beads leads to the possibility that this cairn was of a somewhat different type from the one we opened. It may be that they were mistaken, as many others have been, by puzzling conditions. A trip to Raigir had been long planned but postponed, for the place is not easy of access though as in the case of Dornakal and Balanagar the station yard itself actually includes many cairns. The "station" is merely a flag station, hardly any trains stop there, and there are no conveniences. Eventually I asked Mr. Chapman to arrange for a cairn to be partially opened, in readiness, and on June 11 a party collected there, including Major Vaughan Williams, Mr. Puzey, Mr. Ruddle, and Mr.

* See page 17.

Yazdani. Mr. Wakefield joined us, having travelled by motor car. The morning was mainly spent in a search for some Dolmens, seen by Mr. Puzey some 16 years ago. Mr. Munn had failed to locate these, but the mystery was cleared up, for cultivators had removed them. The Taluqdar informed me that there is another set still standing about twelve miles off.

The cairn had been selected, not for the size of its stone circle, but because water was handy, and in the plan it will be seen that the circle itself has been much disturbed. The outside pots have already been noted as being very fine, and in addition to the white ant nest-work the inside of the cist was notable because for the first time one secured clear evidence that two bodies were in one cist. It is of interest to note that on the surface, in and about the cairns, rude stone implements were found.

After removal from the cist the pots were kept by Mr. Yazdani, and it was while he was preparing them for this meeting that he noticed the marks. In some the marks are very clear, but these are not seen in the illustrations. In others they are mere surface scratches, which would not have been otherwise noticed. A careful examination of pots previously found at Dornakal shows these same faint scratches, so faint indeed and superficial that it is hard to realize that they are deliberate and of the same date as the making of the cairn. The marks can be separated into two classes.

(1) Relatively deep and clear marks seen best on three black pots.

These appear to be symbols, but whether or not they are letters from an alphabet is a matter on which no opinion is yet expressed. The plates show the shape of these marks, and it will be seen that one, perhaps the commonest, is made up of a vertical straight line, with a diagonal short line running from its top extremity, to the left. It resembles a child's drawing of a railway signal, at "safety." The other "symbol" has again a vertical straight line, and a short diagonal line to the left, parallel in direction to the short line in the first symbol, but starting rather more than half way down. It resembles a badly drawn Greek Lambda.

Each of these marks is repeated three times on the lids of a pair of black pots. Elsewhere both appear on the same pot, the second mark once, and the first twice, making three marks in all and, as before, 120 degrees between each mark.

Variations are noticed in the marks, which may be the result of careless drawing, or may be intentional, leading to a hope that they are distinct symbols. More material is wanted.

The above marks are found very faintly scratched on all the other pots removed from this cairn, and also, as has been said, at Dornakal. Each mark is being carefully recorded with a view to comparison and classification.

(2) Marks of a seemingly different nature, and which would inevitably have passed without notice, save that their repetition again drew attention to them. One might be a rude drawing of a doorway, and another of a sword : but as yet all this is mere conjecture.

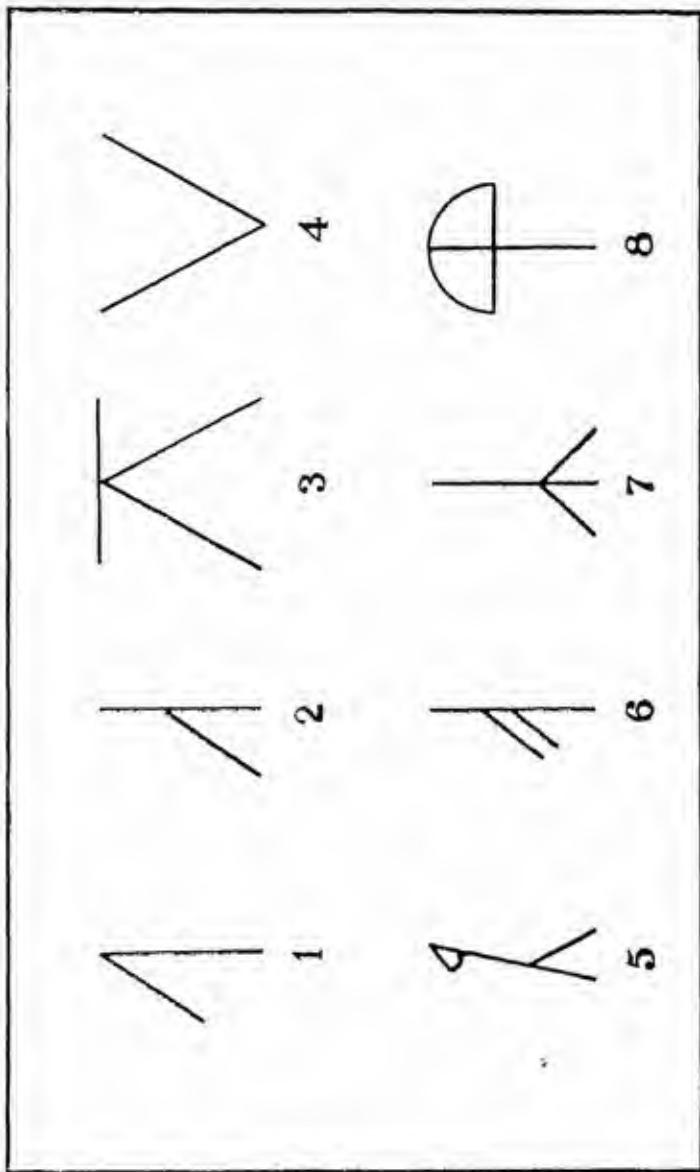
Fortunately we have many of the outside pots in fragments, and these fragments shew the marks well, more especially the "symbols." We are thus able to submit, not only drawings and photographs, but also actual marks, to Sir John Marshall. Meanwhile we await his opinion.

(d) *Bone and its problems.*—Bones are found in various stages of disintegration. In some cases none are found, (e.g., at Maula Ali and at Dornakal). It may well be that this absence merely indicates a final stage of destruction, though we cannot be sure, for a memorial cairn might perhaps have been erected to the memory of a chief who had been drowned, let us say, and the body never recovered. Careful search is called for, and it may be that this will show traces which would otherwise be missed. A well fitting cist is often accompanied by less disintegration than where the fit is bad. Still more so where a roof stone has fallen in. The Raigir group promises the best results so far, and Maula Ali perhaps the worst.

The bones are found in one small area, in the north half of the cist, pots being found to the south. This is the general rule, though in many pots are found to the extreme north, so that the bones are well surrounded by pots. Another close companion may be a dagger.

Our detailed study of bones has hardly commenced, and the difficulties at first sight appear insuperable, for the fragments are small, and few can be recognised. All are buried deep in a thick layer of soil, which is as hard as our excellent roads, and made in fact of the same material. The chaotic

ROUGH DIAGRAM OF " MARKS " FOUND SO FAR AT RAIGIR AND DORNAKAL.



No. 1. Frequent at Raigir and Dornakal.

" 2. " " "

Nos. 3-4. " " Dornakal.

No. 6-7. Single Example at Raigir.

" 5-8. " " " Dornakal.

condition met with is quite compatible with a seemly and neat original arrangement. Time and again water must have entered through the cracks between the stones which form the cist, and the cist must in some cases have been more than half filled with this water during the monsoon. Year by year the silt increased in amount, and gradually buried all its contents. When once buried, no further change could have taken place as regards position. Where a roof stone has fallen in, (and this probably after heavy rain) chaos would inevitably follow, and pots and bones might well be displaced far from their original positions. White ants are probably harmless, perhaps even beneficial, but one cannot exclude the influence of rats where conditions allowed their entry. In any event, complete uniformity of position cannot be hoped for, with so many influences all leading to disturbance of the original arrangements.

Our problem is a double one. Firstly, we have to establish what manner of man we are dealing with, and his racial characteristics. The skull is of course the main point. As yet in our fragments we have met with nothing unusual, and the shape seems to tend towards "dolichocephalic." This is a mere impression, for our material is insufficient. Raigir should help us. All bones which have been met with so far had belonged to people who were rather small, say, 5'-6" in height. Those who expect to find the bones of a "Rakhshasa," 20 feet long, are as fully doomed to disappointment as are those optimists who hope for a large find of gold.

Our second problem is to determine without any error the original position of the body or bodies.

This is possibly more important than all our other problems put together. It is here that our full sized scale plan will be of such service. Each bone, as found, will be located with the tape measure, and labelled. Its number and position will be recorded on the plan. At any future time these fragments can be again laid on the plan itself, and will thus fall at once into their proper position. Such as admit of recognition will be named, and for easy reference, sketched on the plan. A comparison of many such plans may in time give us the solution. This work can be done at leisure, and any person of intelligence can supervise the actual excavation, whether or no he can distinguish a broken fibula from a radius, or knows a metatarsal bone from a metacarpal. The "water" method is not so useful with bone as it is with pottery, for the bone becomes very soft, and crumbles away. Discretion is called for. The bones have been described as being found in one small area. This seems to entirely exclude any idea that the burial could have been in the "extended" position. We have met with nothing which points to cremation, and the subsequent burial of fragments. The chaotic condition has led some to suppose that the body was placed in some temporary resting place, and the bones as such laid in the cairn. This point has to be considered carefully. A cairn would take a long time to make, and if the burial were direct it would seem almost necessary to conclude that cairns must have been kept in partial readiness. The use of salt or other preservative is another possibility as Col. Vost suggests. We have the well-known example of the Egyptian mummy.

Next, we must consider the possibility of the burial having been in the "contracted position." This is widely met with, and its origin dates back far. Munro mentions a burial in Essex, discovered by Mr. Warren in 1910, "a human skeleton buried in a contracted position and having apparently the hands and feet bound to the body with ropes of sand grass." Pottery of a primitive type was found, and the deposit was pre-neolithic. In the later neolithic times it was the common form of burial in many countries, in England, Egypt, etc. In England Bateman and Canon Greenwell are the two chief authorities, and their books are expected next mail. Bateman was present at the opening of over 400 British cairns. In Egypt the custom prevailed among the poorer classes of the non-nomadic population until as late as the VIth Dynasty (roughly between 3000 and 2500 B. C.).

The reason for its adoption is hard to see. It was used by the North American Indian for he wished to be the more easily able to protect the body from the weight of the surrounding earth. Donnelly, in his strange phantasy, "Atlantis" quotes from Herodotus, but I have a better translation from Mr. Pickard Cambridge.*

"The nomads bury their dead in the Greek fashion, with the exception of the Nasamones. The latter bury them in a sitting posture, taking care when a man is about to give up the ghost, to make him sit and not die lying down."

The idea of compelling a dying man to assume the squatting position is at first sight revolting in the

* Herodotus IV, 190.

extreme, and has a suggestion of great discomfort. We, who are used to chairs, must not forget that half the world never sees a chair, but squats, and the position is easy and comfortable if adopted from childhood. For the present-day adult European it is a position impossible to assume, and this inability is an acquired characteristic. Each one of us could have probably been as facile in this respect as our ancestors were in the Palæolithic age, had we only used it all our lives in preference to sitting on a chair. The ankle joint is the crux of the question, and in the town dweller this has a very limited range of movement. It is well known that mountaineers have a larger range of movement, enabling their toes to approach the shin bone more closely. For squatting, an even greater degree is required, unless the ground is on a slope, for on level ground the body tends to fall backwards. As a result of this extreme and habitual flexion the lower end of the tibia touches other bone in the ankle, and takes on a corresponding shape. Let me quote from H. F. Osborn.* "Where the shin bone joins the ankle bone (*astragalus*) are shown two facets, such as are preserved only in those races of existing men which have retained the habit of squatting or the folded position of the limbs; these facets are not found in races which have the habit of sitting. They indicate that the resting position of the Neanderthals while engaged in industrial work was squatting." And again "The flatness of the tibia, which is strongly marked in 62% of the Cro-Magnon skeletons, may well be due to the habit of squatting while engaged in

* *Men of the Old Stone Age*, p. 241.

fashioning flints." Unfortunately our bone fragments do not yet include the lower end of a tibia. Now this "squatting position" is not that which is seen typically in the *dhirzie* (cross legged), but that which the shepherd adopts. The soles of the feet are flat on the ground, and no other part of the body touches the earth. It is the position which millions in India assume to-day, and in which they probably spend most of their lives. It serves them well, and a small blanket protects them from the weather. I am told on good authority that they will even go to sleep in this position, and there seems no reason to doubt it. Dr. Symons writes to me that in cairns in Wales, where the burial was "contracted," investigation of the lower end of the leg bone showed that they spent much time in the squatting position. A little thought therefore shows us that the remarks of Herodotus do not by any means indicate a remarkable rite. To this day the Lingayat caste bury in the sitting position cross legged, facing north.* I am told that a dying man is watched and placed in this posture immediately after death. It seems possible that Herodotus may have been wrong, and that what he describes may have been merely what is to-day illustrated by the Lingayat: but in any case no uncanny significance should be attached to his remark.

The question of "position" will be referred to again, under "Orientation" and its importance lies in this, that it is probably an essential feature in a religious ritual, and a common factor in cairns of an otherwise different type.

* See Thurston's *Castes and Tribes of Southern India*, IV, p. 285.

(6) Changes which occur in Bone and Iron when buried.

It is interesting to consider the changes which have been found to take place in bone when it lies long buried.

At Coldrum in Kent there is a megalithic monument, dating from Neolithic times, and this has been fully investigated. The two large side stones still stand, but the "cap-stone" has fallen. Round this are placed other stones, forming a rough parallelogram. In many respects the whole structure resembles our cairns. In the central chamber were found human bones, and these "ring like porcelain when they are struck."* This was the result of the neighbouring chalk, and no animal matter remained in the bone.

On the other hand the bony fragments found in the Pliocene deposit with the "Piltdown" skull had become impregnated with iron, and were hard, so hard indeed that road-menders had used this intensely interesting deposit.

Organic matter may or may not be found, and affords no proof of age. The Coldrum bones had none, while very ancient bones of animals may contain as much as 30%.

Chalk and iron preserve bone, but other agencies dissolve it, and as an extreme example one can quote the Bronze age Danish tumulus opened in 1861.† For some reason which cannot yet be determined, the bones had disappeared, while the soft parts had remained. Clothing was complete, and

* Keith, p. 8.

† Lord Avebury, p. 42.

two shawls were of fine workmanship, and of a pattern which became fashionable a year or so back. The cap is beautifully made, and while the skull bones had gone, the brain was sufficiently indicated to allow of its ready recognition.

The question of iron rust is equally interesting. Much careful work has been done, but the factors involved are numerous.* Malleable iron produces about ten times its own volume of rust, "Other observers have given higher values, exceeding even twenty times the original volume of the iron." This factor must be kept always in mind, for a considerable alteration in shape must invariably occur when rust is present to any marked extent. A piece of iron may entirely change into rust, and may remain as a shapeless mass, or may be dissolved and removed, leaving but a stain to show where it once lay. After opening many cairns one suspects that this disappearance has been the fate of all the thinner pieces which were in the cairns, and one can now find hardly any trace, *e.g.*, in Moula Ali cairn No. 2 among the pots outside the cist, to the west, were three iron sticks, arranged in a triangle, and traces of an iron vessel above them. The whole suggests a cooking pot, of a shape found in Ireland, supported on its three legs.

In any case the conditions which obtain in the cairns would inevitably result in all iron rusting, water, oxygen, carbonic acid, and organic matter being present. One can hardly expect ever to find a piece of iron which has not been rusted right through.

* T. Turner, *The metallurgy of Iron*, p. 414, etc.

(7) Iron and Copper.

The presence of iron and copper in these cairns opens up a vast field for research. As to the latter our finds have been so scanty that nothing can yet be said.

Iron calls for a fuller discussion.

Iron was introduced into England long after bronze had been in common use. There seems to be a fairly widespread idea that because iron is found in these cairns, therefore they must be recent. The pottery is also put forward as an argument, for it was turned on the wheel. It seems however very unwise to accept such evidence as this, and lately Sir Robert Hadfield has drawn attention to ancient steel found in Ceylon and India. A chisel found in Ceylon had a high carbon content at the cutting edge, up to 9%. Of the Delhi pillar he says : "This is probably one of the finest specimens of iron work ever produced until modern times, and great credit is indeed due to the Eastern metallurgist who worked up such a specimen of his art." He also showed at the meeting a specimen of iron from the Kham Baba pillar (dated by Sir John Marshall, 125 B. C.) as "an ancient piece of high carbon steel which has been hardened by quenching." This piece he described as being the only specimen he had met of ancient iron or steel which contained sufficient carbon to be called steel in the modern sense.

Milne, writing on the "Surgical instruments in Greek and Roman Times" aptly quotes from Hippocrates, the Father of Medicine, who was born in 460 B. C. I have submittted this passage to Mr.

Pickard Cambridge, of Balliol College, Oxford, who tells me that it is best read as follows * :—

“ 2nd illustration. Iron instruments. They melt the iron by regular processes forcing the fire with wind, and taking from the iron the matter which sustains it (lit. the sustenance which it possesses) and having thus rarefied it, they strike it and compress it, and by being given water again (or different water) to sustain it, it becomes strong.”

Sir Robert Hadfield makes no mention of this passage, and Milne says of it “This is the earliest reference to tempering steel by the Greeks with which I am acquainted.” Mr. Pickard Cambridge however adds “but you do not need this passage to prove that the Greeks knew all about quench hardening though it will do as well as any. Homer, Odyssey, I., 391, is the earliest (probable date 9th century B. C.).”

“ Or when a smith dips a great axe or adze in cold water, hissing loudly to temper it, for that is what gives strength to iron.”

He refers also to Aeschylus (*Agamemnon*, 612) and Sophocles (*Ajax*, 651).

Although Milne is not by profession a steel expert, yet he made a thorough study of the subject, with regard to these ancient surgical instruments. He points out that in those old days a very pure ore was used, and a fuel which added no impurities. “ The difference between steel and iron is that steel contains carbon, and, by allowing the ore to remain

* Hippocrates, II, 641.

longer in contact with the charcoal steel is formed, so that a founder setting out to make iron with a pure ore and a pure fuel like charcoal, may, if he is not careful, turn out steel of fine quality."

Ball, in his "Geology of India" has much of interest with regard to the old iron workings of this State. He quotes from Malcolmson * and considers that the mines described are identical with those mentioned in the "Ain-i-Akbari" as occurring at Indoor (Nizamabad). The account is perhaps worth quoting: "This mixture being put in a crucible in small pieces the fire was kept up at a very high heat for 24 hours by means of four bellows and was then allowed to cool down. Cakes of steel of great hardness and weighing on an average $1\frac{1}{2}$ lbs. were taken out from each crucible. They were then covered with clay and annealed in the furnace for 12 to 16 hours, then cooled, and if necessary the annealing was repeated until the requisite degree of malleability had been obtained. The Telinga name for this steel was 'Wootz' and a Kurs of it, weighing 110 rupees was sold on the spot for 8 annas. The daily produce of a furnace was 50 seers, or in value, Rs. 37."

Ball quotes also from Dr. Voysey† (Nirmal Steel Mines):

"A Persian trader from Ispahan was in the habit of going backwards and forwards with the steel. While making his purchases he personally superintended the operations, weighing the proportions of iron, and testing the toughness of the steel himself. He told Dr. Voysey that

* Trans., Geol. Soc., London, New Series, V., p. 546.

† Journal, Asiatic Soc., Bengal, Vol. I., p. 245, and Vol. 88, p. 402.

in Persia the same processes had been tried, but the same quality of steel could not be produced from the ores there." A touch of local colour then follows "As usual the Jaghidar by his exactions was doing his best to crush out the industry."

Further, "Malcolmson remarks that the ore of this locality must be of exceptional quality, as otherwise it could not have retained its reputation as the best material for Damascus blades, in spite of its remote situation in an unsettled country. He attributes this to a comparatively large proportion of protoxide of iron being present. He failed to find evidence of the existence of Titanium."

Dr. Walker however found that the ores of the Hanamkonda region contained Titanium.

We have not yet been able to refer to the original papers which Ball mentions, but the subject is of such obvious importance that these passages have been quoted. It is clear that the question of these old iron workings must be gone into again, and that the "iron" from the cairns must be submitted to a full analysis. Mr. Marrett, of the P. W. D., has secured for me an axe, of fine make, which he is confident was made from iron smelted in the Nizamabad district, before this industry died out. I am glad to say that Mr. Palairet has kindly promised to look after this part of our investigation.

The reference to the Persian trader is important, as showing that the reputation of Indian steel was wide spread. Milne confirms this, in referring to Albucasis, a writer on surgery, at Cordova, who

died in 1106 A.D. "Albucasis in mentioning steel always specifies Indian steel."

We therefore seem justified in refusing to accept the presence of iron as proof of recent construction of these cairns, and it is interesting to find that Bruce Foote considers that iron may have been used in India at a very early date.

(8) Granite.—Method of Working.

It is interesting to consider the methods by means of which the cairn builders made their granite slabs.

Lieut. Newbold wrote an interesting paper in the Royal Asiatic Journal, Vol. VII., p. 113, (Jan. 1842) on the ancient Hindu methods of working granite, comparing them with similar methods employed in ancient Egypt. This paper should be read in full.

He points out that granite has a laminar structure, and compares it to an onion. Fire was used in causing exfoliation, but the heat of the sun was also made use of. The workers judge where foliation will occur by tapping the block, and listening to the note. He draws attention to the fact that the use of granite necessitates the use of iron tools.

Mr. B. Gillett, who was in charge of the Lingam-palli granite quarries, agrees with this. He tells me also that before these quarries were started the stone was tested, and found to be "better than any standard samples of Scotch, Cornish, or Norwegian granite."

Our local granite is, however, rich in "soda felspar" in place of the potash felspar found in

English granite, and is therefore less resistant to weathering. He adds further that granite should not disintegrate so soon when buried as it would on the surface. It is to be noted that our granite is made of large crystals and should more properly be termed a "gneiss."

There is a fine rounded outcrop quite close to the Maula Ali (North) group of cairns, and we hope to be able to watch the methods of the present-day Waddar while he makes us a slab as large as we find them in an average cairn.

(9) Orientation.

Orientation calls for a separate section. We have seen that the cist is placed with its long axis north and south. Many are within one degree of true north, but several opened lately have been as much as 20 degrees east. It remains to be seen whether a certain percentage of their estimations were accurate, and some far off the mark, or whether all were more or less guess work. A full tabulation should produce an answer to this question, though we have yet to determine the "How" and the "Why." Then again we must study the orientation of structures other than cairns, but built presumably by people closely connected with them. Meadows Taylor studied Dolmens in the Bellary district, where there are a large number, and in addition there are stone alignments, etc. It was in connection with these that he first demonstrated a similarity with equivalent structures in Europe.

Sir Norman Lockyer has devoted an enormous amount of time to the study of Stonehenge and other

monuments in Great Britain, and considers that their varied orientation indicates two periods of worship, an earlier one devoted to a New Year, commencing on May 1st; and a later group, best seen at Stonehenge, which was built for the June 21st sunrise. Dolmens, etc., he considers to have been originally observation stations. Secondary alignments assisted, for they pointed towards the place on the horizon where a star rose and warned the priests of the approaching sunrise, so that the ceremony could be timed with great accuracy. There were no clocks in those days and he suggests that the priests might well have got over this difficulty by utilising the ceremony itself as a gauge of time, commencing when the test star rose. We have the well known example, in the person of the cook, who sang in a loud steady voice; two verses of the hymn for a soft boiled egg, and three for a hard,

The alignments in England are so accurate that Sir Norman Lockyer has been able to date Stonehenge, with a possible error of, say, 200 years, more, or less: for "precession" has caused a corresponding change since then.

He refers rather scornfully to records from India in these matters, Magnetic North alone being mentioned, this being of course useless (p. 110).

We must not perpetuate this error. I hear from the Officer in charge of No. 18 Party, Government of India Survey, that the present variation in Secunderabad is $0^{\circ}20'$ west, and at Dornakal, $0^{\circ}25'$ west. This is increasing by $0^{\circ}41''$ yearly, and the full extent of the variation is not yet known.

Other structures show orientation in our cairns besides the cist. We have found an axe to the east, a cooking pot of iron to the west, and a copper bowl to the north. This however may be merely accidental. Not so the pots inside the cist, grouped always to the south, or the bones found always in the north half. Almost more important than the position of the body may be its orientation, and the question at once arises, as to whether the orientation of the cist may not be with the sole object of enabling the body to face in one particular direction.

Numerous examples might be quoted, *e.g.*, the Muhammadans here bury with the head to the north, and the face turned to the west, towards Mecca; and the Gonds, Lingayats, etc., each having a special custom.

As yet we can do no more than merely suggest possible reasons. The importance of orientation lies in this, that it shares with body position, etc., in being an essential factor in a religious ritual, and it is through this and such allied features that we may be able to trace out the connections between cairns which are widely separated.

We must now consider how it was that "North" was arrived at. There is no evidence that the compass was known in these times, though the materials were to hand, a needle floating on water. We all know how simple it is to make such a compass, the needle being first placed on a cigarette paper. A sewing needle does quite well.

Even in comparatively recent years the Pole Star was not available, as the following figures will show. Mr. Pocock has kindly given them to me.

Distance between the Pole Star and the True Pole.

A. L. 1000	$3^{\circ} \cdot 56'$.
A. D. 1000	$9^{\circ} \cdot 28'$.
B. C. 1000	$15^{\circ} \cdot 22'$.
B. C. 2000	$20^{\circ} \cdot 32'$.
B. C. 3000	$25^{\circ} \cdot 32'$.

When one considers that the diameter of the moon is roughly half a degree it will be seen that a difference of ten degrees means a distance equal to twenty moon diameters.

Other observations of the sun and stars would however permit any clear observer to estimate "North" with considerable accuracy. We must therefore presume that such means were employed.

(10) Local Legend, Folk-lore and Present-day Custom.

I am glad to be able to say that Mr. Wakefield, who is taking great interest in the subject, has undertaken to collect what can be found here in the way of local legend and folk-lore.

So far, the most significant point about the legends is their absence. Had the cairns been in any way "recent," they would inevitably have been surrounded by legend.

Wherever one goes, one hears the cairns called the "Rakhshasa's Tombs" and it is perhaps a coincidence that the same expression is found in Europe, "The Giant's Graves." At Raigir the idea of a giant took a literal form, and some years

ago I was gravely informed that the stone circles contains the bones of men, 20 feet long.

Lieut. Newbold wrote a most interesting paper* describing some heaps of scoria. He concluded after much research that these heaps were the sites where the giants of old, the Rakhshasas, had been burnt, 2,000 at a time. Local legend was quite clear on the point. His paper should be read in full. Mr. Munn's little book on " †Geology of His Highness the Nizam's Dominions" has just come into my hands and he gives an account of an ash heap which Mr. Maclaren investigated near Wandalli. After a full analysis he came to the same conclusion as had Newbold, though on different evidence. Mr. Munn's book is worth reading from cover to cover, and is particularly interesting with regard to iron. He curiously agrees with Milne, and speaks of the "unconscious manufacture of steel," an expression which sums up the matter.

Apart from these ash heaps, legend tells us little that we can depend on. Miss Frere's book, "Old Deccan Days" has among other stories one entitled "The Rakhshasa's House," but the Rakhshasa figures merely as a gentleman whom it was seemingly quite correct to push, at the first opportunity, down a well. The village of Rackashpet, near Nizamabad, and close to the old iron-smelting places, is more promising. There seems to be a clear legend here. The name of the Rakhshasa is given, and he ate human beings: until one of his intended victims killed him. The idea of the "giant" is apparently

* Journal, Royal Asiatic Soc., Vol. VII., p. 129.

† Geology of His Highness the Nizam's Dominions, p. 93.

connected with the large boulders which inhabitants in olden times were thought to have used as missiles. The objectionable character which the "Rakhshasa" bears is probably due to the opposition he showed to the Brahmans, and the impression then formed has continued. Folklore is more promising than legend. There is much in common between the superstitions of Europe and India, and as an example one may quote the well established custom of making a doll to represent an enemy, and putting pins into this doll, with a view to causing sickness or pain. One may also refer to that "abominable superstition" quoted on page 28, para. 88 of the Royal Commission Report (No. Cd. 8189) which is still found in Europe, and is all too prevalent in the more suitable soil of this country. These superstitions, etc., would appear, from their similarity, to have had a common origin in the distant past, and should be well worth a study, for they may corroborate other evidence which points to there having been some connecting link between countries thousands of miles apart.

Present day customs must also be studied; especially burial customs among such tribes as have remained outside the influence of the Brahman, e.g., Gond, Lingayat, Toda, etc.

(II) Our Problems.

The problems facing us are numerous and abstruse. We cannot afford to neglect any clue, though some will doubtless think that many of the points referred to are trivial and superfluous.

Much space has been devoted to Iron, for this question is of wide interest.

The physical characteristics of the cairns must be clearly established, and these include such diverse problems as the erosion of the surrounding ground surface, and the method of manufacture of a granite slab.

We must carefully enquire into all points connected with Orientation, the numbers of stones in the circle and measurements.

Above all we have yet to determine the original position of the body or bodies. Variations in different cairns are met with and demand a close study. It may be through variations that we shall be able to establish that one group or type is older than another, for a long period of time must be covered by the cairns.

Later, we hope to find ourselves in a position to compare, with advantage, our cairns with those found elsewhere in India, and in other parts of the world. Did our cairn builder evolve this method of burial himself, unaided, with its clear belief in an After Life, its ritual in connection with Orientation, and its desire to provide the Dead with all comforts : or did he somehow have intercourse with other races, who had adopted similar ideas ? This is our final, and most difficult problem. It is here perhaps that the strange "marks" may be of such great value.

It seems a far cry to Wales, but Major Vaughan Williams will tell us that our cairns closely resemble the Welsh ones, and Dr Symons who has opened many there writes to me that a diagram I had sent

him might have been of one he had opened, save that ours are on a far larger scale.

To Meadows Taylor, for all time, belongs the honour of having first suggested that the Deccan Dolmen was similar to those in Great Britain, but unfortunately we have not yet secured a copy of the more important of his papers, and in any case this is not the time for a detailed discussion. We have much to do first.

Other questions also demand an answer. These cairn builders, who were they? Were they the "Aborigines" here, or did they, as has happened so often since, invade these parts from elsewhere? What was their fate? They cannot have all died out, and their descendants must form part of the present population of South India, though probably of mixed blood. As with their blood, so with their customs, for here again mixture and confusion are to be expected. These questions are interwoven with the problems connected with the origin of Hindu theology and customs, and no full solution may ever be afforded.

(12) The Cairn Builder.

Apart therefore from the investigation of cairns in relationship to those in far off countries, ours are well worth a thorough study for the sake of the light they throw on the inhabitants of this part of India in early times. We may at least presume for the time being that the fundamental principles which underlie the cairns were evolved and in full swing before the first Brahman came here, though doubtless cairn building did not at once cease at this date.

Already we can piece together a picture which is far more lifelike than that afforded by legend or history.

The early inhabitant no longer appears to our mind's eye as a Rakhshasa, a strange, fictitious being, a demon giant; for in his stead we think of a cairn builder, a man of probably somewhat small stature. He had settled areas of habitation, occupied for long periods. He tilled the land. He was a skilled potter, not devoid of artistic instincts. He knew the use of iron and of copper, and was a skilled worker in both. He made bead ornaments. He could make granite slabs of large size, and was an observer of some astronomical merit. He was no mean engineer, and could construct on sound principles. Finally and here we come to the key note of his cairn, he was a firm believer in an after life, and buried his dead in a magnificent tomb, well provided with all the deceased could want on his long journey.

The funeral ceremony must have been impressive in the extreme. The pots outside the cist alone indicate that many who attended brought with them offerings, and one cannot accept without a protest the suggestion that the cairn was made deep, and strong, and plentifully provided with food and drink, cooking pots and weapons, with the sole object of restraining the Spirit of the Departed from "Walking," and thus causing disturbance to the living.

Let me conclude with a quotation from Sir Thomas Browne, who is perhaps best known for his

writings on "Urn Burial" (1658 A.D.). A friend had enquired of him his opinion on certain tumuli and burrows, and in his reply he says "Which neither admitting ornament epitaph or inscription may, if earthquakes spare them, outlast all other monuments. Obelisks have their term, and pyramids will tumble, but these mountainous monuments may stand and are like to have the same period with the earth." Surely we may say the same of the cairn.

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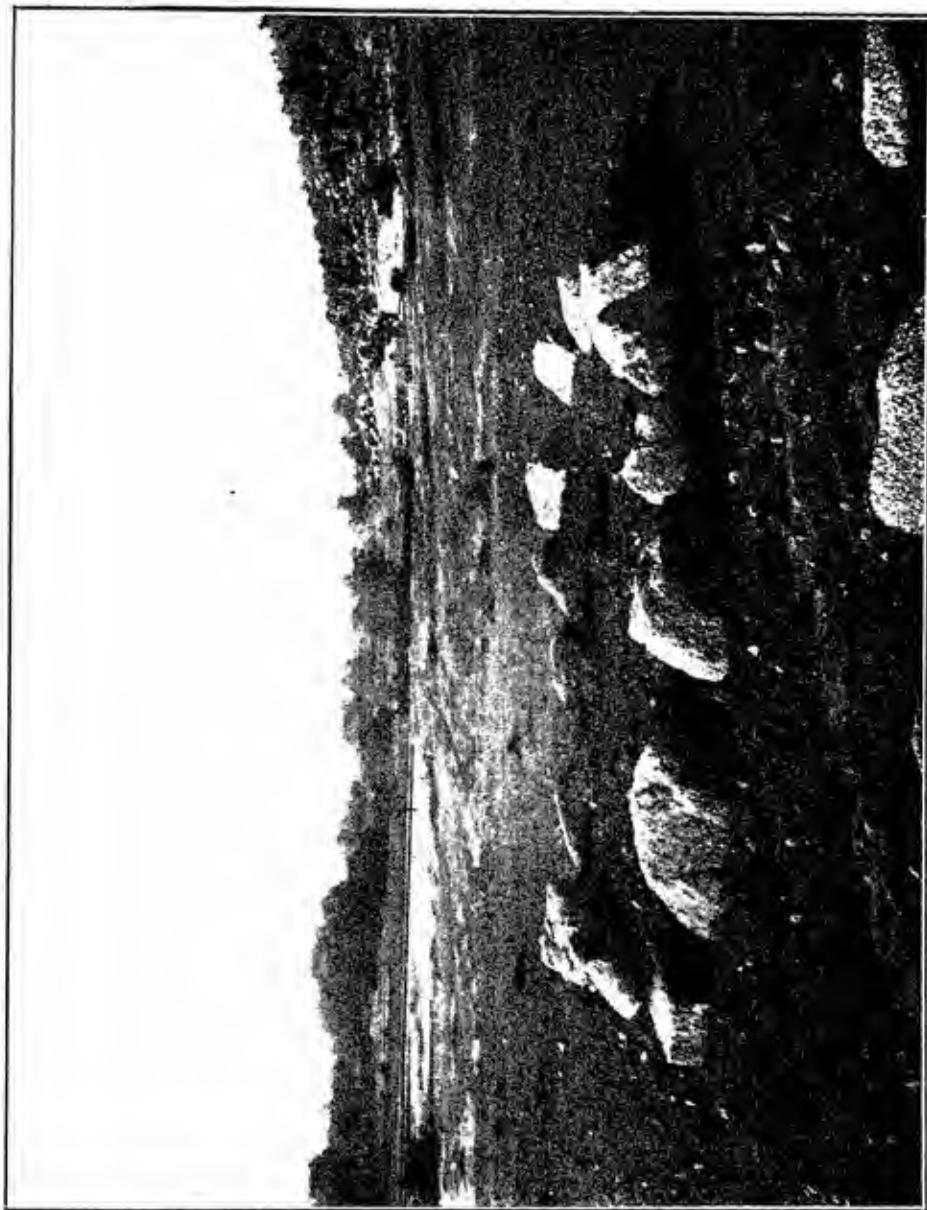
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STONE CIRCLE.
(Maula Ali W.)



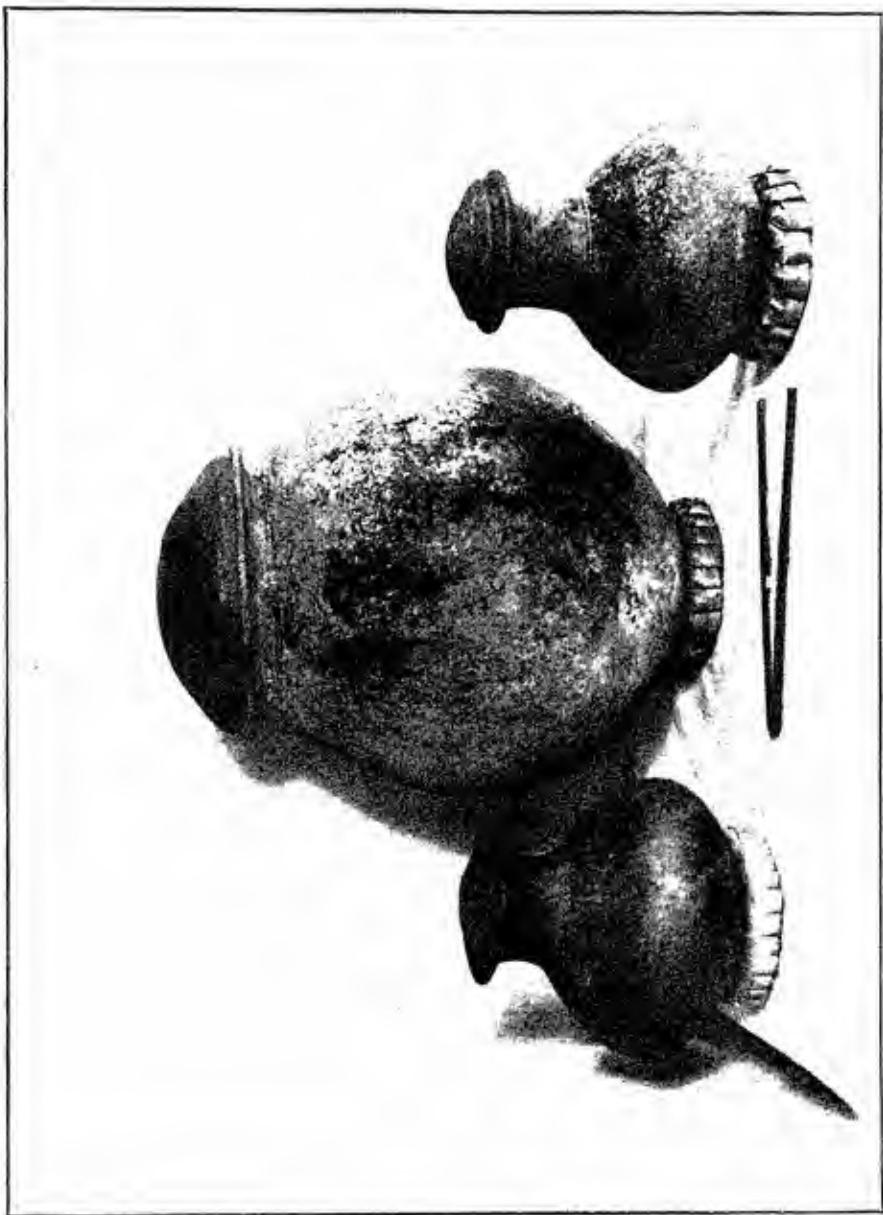
Immediately beyond circle are to be seen remains of three cairns of which the stone circles have been removed.

CIST : MAULA ALI N.



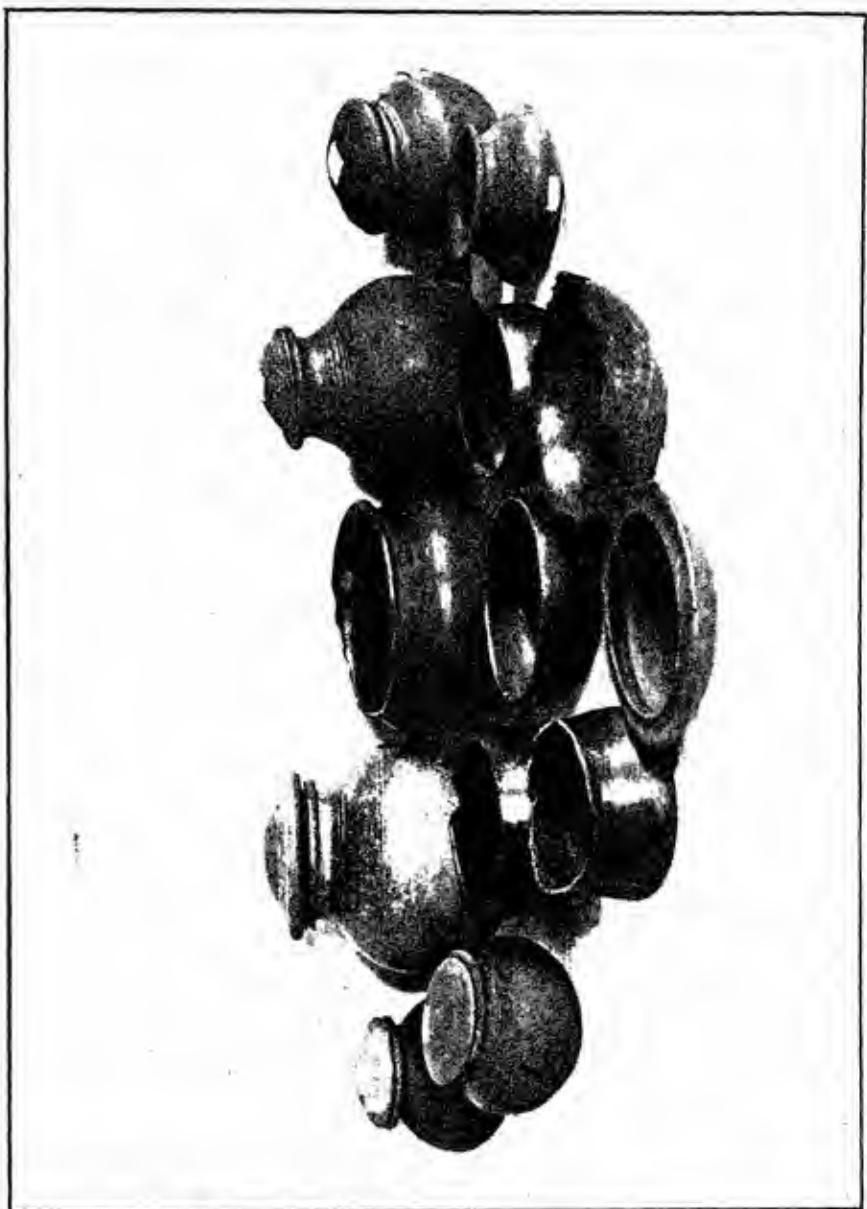
Shows unusually thin slabs and disintegrated outside pots.
(Note contrast with pots in Plate XLIII)

RED POTS FROM OUTSIDE THE CIST (RAIGIR).



Have various inscribed marks including Nos 1 and 2 of Diagram of Marks facing page 211.

POTTERY FROM ONE CIST AT DORNAKAL.
(Black and red.)



In foreground lid upside down. This set was the result of the first attempt at using the water method.

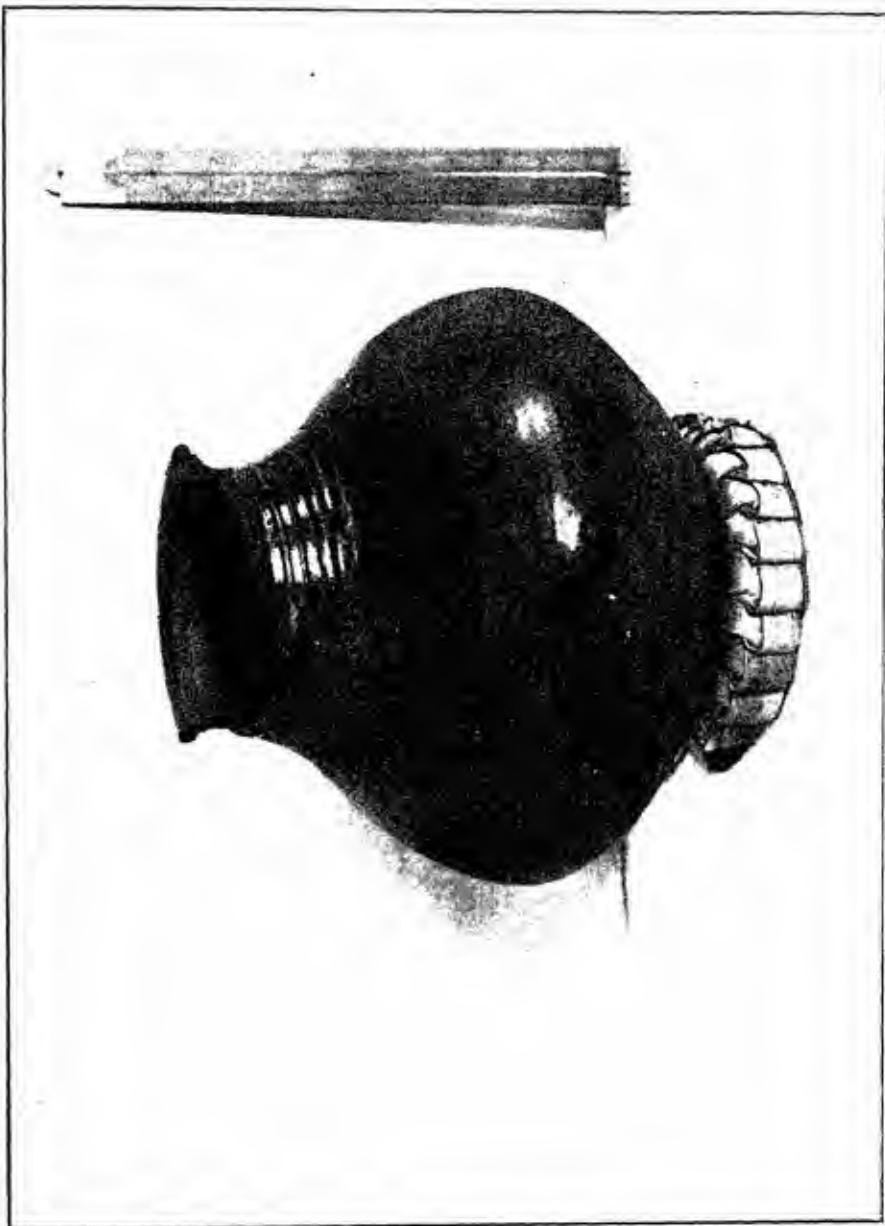


POTS OF VARIOUS SHAPES.
(Black glaze.)



Two in foreground are left filled with silt as found. Three supporting rings behind. Outside pots are inscribed with
Nos. 1—2 of Diagram of Marks.





BLACK GLAZED POT.
(Inside the Gist, Raigir.)

The pot has on it marks Nos. 1 and 2.



IRON IMPLEMENTS.



Sickles from Dourtakal, others from Mautla Ali

27/10

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Archaeological Library, 22686

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